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In German research project, cars store electricity for Smart Home

The smart home on the grounds of the Karlsruhe Institute for Technology in southwestern German is ready for new tenants.

The prefab 80 square meter home is a prototype of the energy-efficient household of the future. That means electric vehicles serve as energy-storage units, while electricity users in the home are guided to do so intelligently.

The project, called MeRegioMobil is a cooperation of energy group EnBW, Opel, Daimler, Bosch, and SAP. The city of Karlsruhe and the Fraunhofer research institute are also participating in the project, whose goal is to integrate innovative electric vehicles as energy storage units into tomorrow's energy infrastructure.

The Smart Home features typical consumers in an environment with decentralized energy generators, including a photovoltaic system and a small combined heat and power generation system. A recharging station connects electric vehicles as both storage units and power consumers.

The vehicle's battery is capable of absorbing surplus electricity in low-use periods. When demand is high, the vehicle can return that power to the grid.

EnBW is investigation how electric vehicles can be connected through intelligent charging stations, while Bosch is developing the prototype for these stations. The automotive supplier is also drawing up the outline for the overall concept that is being studied.

German premium carmaker Daimler is making available several electric vehicles, while Opel, a unit of General Motors, is using an electric version of its Meriva minivan to test bi-directional battery and control technology.

SAP Research is looking into market-oriented business processes required by the integration of electric vehicles and the electricity grid. The business software group is also developing a data protection framework to cover consumers' future interaction with other vehicles and with charging stations.

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